# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-143078
(43)Date of publication of application : 21.05.2002

(51)Int.Cl. A61B 1/00

(21)Application number : 2000-340889
(22)Date of filing : 08.11.2000

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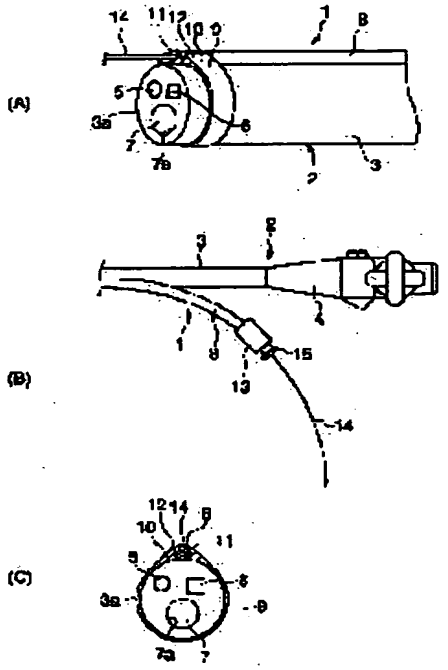
## (54) OUTSIDE TUBE FOR ENDOSCOPE

(57)Abstract:
PROBLEM TO BE SOLVED: To provide an outside tube for an endoscope that can expand the kinds of usable endo-therapy accessories, improve the safety of endoscope technique and expand applied cases.
SOLUTION: A tube fixing ring 9 is provided for detachably engaging the tip part of a tube body 8 with the tip part of an insert part 3 of the endoscope 2. The engagement of the tube fixing ring 9 is released by the operation of a grip part 13 on the base end side of the tube body 8.




LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

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* NOTICES *



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CLAIMS

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[Claim(s)]
[Claim 1] The body of a tube is formed with the flexible tube installed in the hand control unit side by the side of the end face section along with the insertion section of said endoscope from the point of the insertion section of an endoscope. In the tube with outside for endoscopes with which said body of a tube is attached in the insertion section of said endoscope dismountable The tube with outside for endoscopes characterized by providing an engagement discharge means by which the actuation by the side of the engagement section which engages the point of said body of a tube with the point of the insertion section of said endoscope possible [ engaging and releasing ], and the end face section of said body of a tube cancels engagement of said engagement section.

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[Translation done.]

## DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the tube with outside for endoscopes attached in an endoscope removable.
[0002]
[Description of the Prior Art] Generally, it is attached in the insertion section of an endoscope removable if needed, and the tube with outside for endoscopes which guides insertion of a treatment implement is shown in JP,11-192203,A, JP,2558354,Y, etc. Here, a tube with outside is fixed to JP,11-192203,A on an elastic band, a medical tape, etc., or the configuration attached in the insertion section of an endoscope through ring-like the cap for anchoring etc. is shown. Furthermore, the sheet-like anchoring section is prepared in JP,2558354,Y at the point of a tube with outside, and the configuration which attaches this anchoring section in the insertion section of an endoscope with a pressure sensitive adhesive doudle coated tape etc. is shown.
[0003]
[Problem(s) to be Solved by the Invention] Conventionally [ above-mentioned ], outside the configuration, with the elastic band, the medical tape, the pressure sensitive adhesive doudle coated tape, etc., it fixes to the insertion section of an endoscope, or the with tube is being fixed to the insertion section of an endoscope through the cap for anchoring etc. Therefore, in demounting the tube with outside attached in the insertion section of an endoscope from the insertion section of an endoscope, where extraction is carried out from a patient's inside of the body, an endoscope once Since it is necessary to demount an elastic band, a medical tape, a pressure sensitive adhesive doudle coated tape, etc. outside a body, or to do the troublesome activity which demounts the cap for anchoring etc., the activity takes time amount, and it carries out removing in the technique the tube with outside attached in the endoscope in difficulty, it is, and has a problem.
[0004] Moreover, since the class of treatment implement which can be inserted in the inside of the body through a tube with outside where an endoscope is inserted in a patient's inside of the body is restricted to a thing [ minor diameter / bore / of a tube with outside ], it has the problem which cannot use a treatment implement [ major diameter / bore / of a tube with outside ]. Therefore, there is a problem to which the application case of the endoscopic technique is restricted.
[0005] In addition, since the outer diameter of a tube with this outside also becomes large when the bore of a tube with outside is enlarged, in order to use a major diameter treatment implement, there is a problem on which the insertion nature of an endoscope is reduced.
[0006] This invention was made paying attention to the above-mentioned situation, and the purpose can expand the class of treatment implement which can be used, and is to offer the tube with outside for endoscopes which can aim at improvement in safety of the endoscopic technique, and expansion of an application case.
[0007]
[Means for Solving the Problem] The body of a tube is formed with the flexible tube with which this invention is installed in the hand control unit side by the side of the end face section along with the insertion section of said endoscope from the point of the insertion section of an endoscope. In the tube with outside for endoscopes with which said body of a tube is attached in the insertion section of said endoscope dismountable It is the tube with outside for endoscopes characterized by providing an engagement discharge means by which the actuation by the side of the engagement section which engages the point of said body of a tube with the point of the insertion section of said endoscope possible [ engaging and releasing ], and the end face section of said body of a tube cancels engagement of said engagement section. And the engagement section is made to engage with the point of the insertion section of an endoscope at the time of use of an endoscope, and a treatment implement is made to insert in in the body of a tube of a tube with outside in this condition by this invention. Moreover, in demounting the body of a tube of a tube with outside from the insertion section of an endoscope, actuation of the engagement discharge means by the side of the end face section of the body of a tube cancels engagement of the engagement section.
[0008]
[Embodiment of the Invention] Hereafter, the gestalt of operation of the 1st of this invention is explained with reference to drawing 1 (A) - (C) thru/or drawing 4 (A), and (B). A part for the point of the insertion section 3 of the endoscope 2 with which drawing 1 (A) attached the tube 1 with outside of the gestalt of this operation for endoscopes, and drawing 1 (B) show the part of the hand control unit 4 connected with the end face section of the insertion section 3 of an endoscope 2, respectively.
[0009] Furthermore, as shown in drawing 1 (C), the lighting window part 5 in which the lighting lens was arranged, the observation window part 6 in which the objective lens was arranged, tip opening 7a of the treatment implement insertion channel 7, etc. are arranged in apical surface 3a of the insertion section 3 of an endoscope 2.
[0010] Moreover, the body 8 of a tube is formed with the flexible tube with which the tube 1 with outside for endoscopes is installed in the hand control unit 4 side by the side of the end face section along with the insertion section 3 of an endoscope 2 from the point of the insertion section 3 of an endoscope 2. Furthermore, the tube stop ring (engagement section) 9 attached in the point of the insertion section 3 of an endoscope 2 is formed in this tube 1 with outside for endoscopes. This tube stop ring 9 is being fixed to the point peripheral face of the insertion section 3 with means, such as immobilization by friction, and adhesion. Moreover, a part of insertion section 3 may make the tube stop ring 9 serve a double purpose.

[0011] As shown in this tube stop ring 9 at drawing 1 (C), the protrusion section 10 which protruded outward is formed in a part of hoop direction. The engagement slot 11 of the tube 1 with outside is formed in this protrusion section 10. This engagement slot 11 is formed in the cross-section configuration of the body 8 of a tube of the tube 1 with outside, and the configuration which carries out abbreviation correspondence. Here, the omission prevention section 12 of the tube 1 with outside with a flute width narrower than the diameter of the tube 1 with outside is formed in the open end of the engagement slot 11. And the body 8 of a tube of the tube 1 with outside is in the condition inserted in this engagement slot 11, and is engaged possible [ engaging and releasing ] according to frictional force. At the time of this engagement, it is prevented that the body 8 of a tube of the tube 1 with outside falls out in an exterior side from the open end of the engagement slot 11 by the omission prevention section 12 of the engagement slot 11.
[0012] Moreover, the major diameter grasping section 13 for grasping (engagement discharge means) is formed in the end face section of the body 8 of a tube of the tube 1 with outside. the mouthpiece for introducing a narrow diameter treatment implement or guide wire 14 into the end of this grasping section 13 — the section 15 is arranged.
[0013] Next, an operation of the tube 1 with outside of the gestalt of this implementation of the above-mentioned configuration for endoscopes is explained. It is set to the condition that guide wire 14 was beforehand inserted into the body 8 of a tube of the tube 1 with outside outside a patient's body when using it by the endoscopic operation, equipping the insertion section 3 of an endoscope 2 with the tube 1 with outside of the gestalt of this operation for endoscopes.
[0014] Then, you make it engaged in the condition of inserting the point of the body 8 of a tube of the tube 1 with outside in the engagement slot 11 of the tube stop ring 9 fixed to the point of the insertion section 3 of an endoscope 2 beforehand. It is set to the condition that the body 8 of a tube of the tube 1 with outside was installed in the hand control unit 4 side by the side of the end face section along with the insertion section 3 by this from the point of the insertion section 3 of an endoscope 2 as shown in drawing 1 (A) and (B).
[0015] In this condition, the insertion section 3 of an endoscope 2 is inserted into a patient's coelome. And after the insertion section 3 of an endoscope 2 is inserted in the location of the purpose in a patient's coelome, a narrow diameter treatment implement is inserted in the interior of the tube 1 with outside rather than the bore of the tube 1 with outside if needed. At this time, the treatment implement inserted in the interior of the tube 1 with outside is inserted in the inside of the body in the condition of having been guided to the guide wire 14 within the body 8 of a tube.
[0016] Moreover, as shown in drawing 3 (B), when inserting other treatment implements 16 thicker than the bore of the tube 1 with outside, for example, balun die RETA, into a coelome, exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2, and inserts balun die RETA 16 in the inside of the body is performed. Guide wire 14 is used at the time of this exchange, and it is carried out as it is a degree.
[0017] First, where the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside is grasped, hauling actuation of the body 8 of a tube is carried out at a hand side. As this operating physical force shows to drawing 2 (A), the body 8 of a tube of the tube 1 with outside is drawn out from the engagement slot 11 of the tube stop ring 9 at a hand side, and engagement in the insertion section 3 of an endoscope 2 and the tube 1 with outside is canceled. The activity which takes out only the tube 1 with outside outside of the body in the condition of having been continuously left guide wire 14 as it was and guided to this guide wire 14 in this condition is done.
[0018] Furthermore, after extraction of the tube 1 with outside, as shown in drawing 3 (B), as shown in drawing 4 (B), guide wire 14 is made a guide and another treatment implement 16, for example, balun die RETA, is inserted into a coelome. Where the point of guide wire 14 is grasped under observation of an endoscope 2 with the grasping forceps inserted in the inside of the body [ at this time 7, for example, the treatment implement insertion channel of an endoscope 2, ], exchange with the tube 1 with outside and balun die RETA 16 is performed. In addition, it is not necessary to necessarily grasp the point of guide wire 14 with grasping forceps etc. For example, by using the guide wire 14 of about 2 times [ of the die length of the tube 1 with outside ] die length, where the hand side of guide wire 14 is grasped, exchange with the tube 1 with outside and balun die RETA 16 can be performed.
[0019] Then, the following effectiveness is done so if it is in the thing of the above-mentioned configuration. Namely, the engagement slot 11 of the tube 1 with outside is formed in the tube stop ring 9 fixed to the point peripheral face of the insertion section 3 of an endoscope 2 by the tube 1 with outside of the gestalt of this operation for endoscopes. While making the body 8 of a tube of the tube 1 with outside engage with this engagement slot 11 possible [ engaging and releasing ] In the condition of having made the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside grasping Hauling actuation of the body 8 of a tube is carried out at a hand side, and he draws out the body 8 of a tube of the tube 1 with outside from the engagement slot 11 of the tube stop ring 9 to a hand side, and is trying to make engagement in the insertion section 3 of an endoscope 2, and the tube 1 with outside cancel according to this operating physical force. Therefore, since the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body can be done without carrying out extraction of the insertion section 3 of an endoscope 2 from a patient's inside of the body by the tube 1 with outside of the gestalt of this operation for endoscopes, the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 simply compared with the former can be done.
[0020] Furthermore, other treatment implements thicker than the bore of the tube 1 with outside in a coelome with the gestalt of this operation, For example, since exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body, and inserts balun die RETA 16 in the inside of the body can be performed when inserting balun die RETA 16 A thick treatment implement can also be used without restricting the treatment implement which can be used to the bore of the tube 1 with outside by the endoscopic operation. Therefore, there is effectiveness which can increase the application case of the endoscopic technique.
[0021] Moreover, since the tube 1 with outside should just have the bore which can insert guide wire 14, it can make small the outer diameter of the tube 1 with outside, and, therefore, does not reduce the insertion nature and the operability of an endoscope 2. Conventionally, the technique which was being performed blindly, for example, the example of a balun escape of achalasia (achalasia) etc., can carry out now under accepting reality of an endoscope 2 under an X-ray, and, therefore, safety improves.
[0022] Moreover, drawing 5 shows the gestalt of operation of the 2nd of this invention. The gestalt of this operation establishes

the wearing slot 21 of the tube 1 with outside in the peripheral face of the insertion section 3 of an endoscope 2, and changes it into the configuration which holds the tube 1 with outside of the gestalt (refer to drawing 1 (A) - (C) thru/or drawing 4 R> 4 (A), and (B)) of the 1st operation for endoscopes in this wearing slot 21. The wearing slot 21 of the peripheral face of this insertion section 3 is formed in the magnitude which is extent which can hold the tube 1 with outside whole.

[0023] Moreover, the tube stop ring (engagement section) 22 which engages with the point of the insertion section 3 of an endoscope 2 the tube 1 with outside held in the wearing slot 21 of the insertion section 3 possible [ engaging and releasing ] is formed. And the tube 1 with outside is engaged possible [ engaging and releasing ] by pinching the tube 1 with outside between this tube stop ring 22 and the wearing slot 21 of the insertion section 3.

[0024] Then, the following effectiveness is done so if it is in the thing of the above-mentioned configuration. Namely, while establishing the wearing slot 21 of the tube 1 with outside in the peripheral face of the insertion section 3 of an endoscope 2 with the gestalt of this operation and holding the tube 1 with outside of the gestalt of the 1st operation for endoscopes in this wearing slot 21 The tube 1 with outside is made to be engaged possible [ engaging and releasing ] by forming the tube stop ring 22 in the point of the insertion section 3 of an endoscope 2, and pinching the tube 1 with outside between this tube stop ring 22 and the wearing slot 21 of the insertion section 3. And hauling actuation of the body 8 of a tube is carried out at a hand side, and he draws out the body 8 of a tube of the tube 1 with outside to a hand side from between the tube stop ring 22 and the wearing slots 21 of the insertion section 3, and is trying to make engagement in the insertion section 3 of an endoscope 2, and the tube 1 with outside cancel according to this operating physical force in the condition of having made the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside grasping. Therefore, since the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body can be done without carrying out extraction of the insertion section 3 of an endoscope 2 from a patient's inside of the body like [ the tube 1 with outside of the gestalt of this operation for endoscopes ] the gestalt of the 1st operation, the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 simply compared with the former can be done.

[0025] Furthermore, other treatment implements thicker than the bore of the tube 1 with outside in a coelome also with the gestalt of this operation, For example, the guide wire 14 inserted in the tube 1 with outside when balun die RETA 16 was inserted is made a guide. Since exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body, and inserts balun die RETA 16 in the inside of the body can be performed A thick treatment implement can also be used without restricting the treatment implement which can be used to the bore of the tube 1 with outside by the endoscopic operation. Therefore, there is effectiveness which can increase the application case of the endoscopic technique.

[0026] Moreover, since the with tube 1 is held in the wearing slot 21 formed in the peripheral face of the insertion section 3 of an endoscope 2 outside the gestalt of this operation, the tube 1 with outside is not projected on the outside of the insertion section 3 of an endoscope 2. Therefore, improvement in the workability which inserts the insertion section 3 of an endoscope 2 into a coelome where the outside of the insertion section 3 of an endoscope 2 is equipped with the tube 1 with outside can be aimed at.

[0027] Moreover, drawing 6 (A), (B), and drawing 7 show the gestalt of operation of the 3rd of this invention. The gestalt of this operation changes the configuration of the tube 1 with outside of the gestalt (refer to drawing 1 (A) - (C) thru/or drawing 4 (A), and (B)) of the 1st operation for endoscopes as follows.

[0028] That is, the engagement heights 31 protrude on the point peripheral face of the tube 1 with outside with the gestalt of this operation. The leg 32 of the shape of an abbreviation triangle which becomes broad is formed as are shown in these engagement heights 31 at drawing 6 (A) and it separates from a joint with the peripheral face of the tube 1 with outside.

[0029] Moreover, the engagement heights 31 of the tube 1 with outside and the engagement crevice 34 of a corresponding configuration are formed in the tube stop ring 33 attached in the point of the insertion section 3 of an endoscope 2. And outside the gestalt of this operation, the body 8 of a tube of the with tube 1 is in the condition that the engagement heights 31 were inserted in the engagement crevice 34 of the tube stop ring 33, as shown in drawing 6 (A) and (B), and it is engaged possible [ engaging and releasing ] according to frictional force.

[0030] Moreover, by pulling and operating the body 8 of a tube to a hand side, where the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside is grasped, as the operating physical force at this time shows to drawing 7 , the engagement heights 31 of the tube 1 with outside are drawn out from the engagement crevice 34 of the tube stop ring 33 at a hand side, and engagement in the insertion section 3 of an endoscope 2 and the tube 1 with outside is canceled.

[0031] Then, the following effectiveness is done so if it is in the thing of the above-mentioned configuration. Namely, the engagement heights 31 are protruded on the point peripheral face of the tube 1 with outside with the gestalt of this operation. In the condition of having made the engagement heights 31 of the tube 1 with outside inserting in the engagement crevice 34 of the tube stop ring 33 attached in the point of the insertion section 3 of an endoscope 2 While making it engaged possible [ engaging and releasing ] according to frictional force, where the grasping section 13 of the end face section of the body 8 of a tube of the tube 1 with outside is grasped He draws out the engagement heights 31 of the tube 1 with outside from the engagement crevice 34 of the tube stop ring 33 to a hand side, and is trying to make engagement in the insertion section 3 of an endoscope 2, and the tube 1 with outside cancel according to the operating physical force at this time by pulling and operating the body 8 of a tube to a hand side. Therefore, since the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body can be done without carrying out extraction of the insertion section 3 of an endoscope 2 from a patient's inside of the body with the gestalt of this operation as well as the gestalt of the 1st operation, the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 simply compared with the former can be done.

[0032] Furthermore, other treatment implements thicker than the bore of the tube 1 with outside in a coelome also with the gestalt of this operation, For example, since exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body, and inserts balun die RETA 16 in the inside of the body can be performed when inserting balun die RETA 16 A thick treatment implement can also be used without restricting the treatment implement which can be used to the bore of the tube 1 with outside by the endoscopic operation. Therefore, there is effectiveness which can increase the application case of the endoscopic technique.

[0033] Moreover, drawing 8 (A), (B), or drawing 10 shows the gestalt of operation of the 4th of this invention. The gestalt of this operation changes the configuration of the tube 1 with outside of the gestalt (refer to drawing 1 (A) - (C) thru/or drawing 4 (A), and (B)) of the 1st operation for endoscopes as follows.
[0034] That is, with the gestalt of this operation, the tube 1 with outside for endoscopes is formed with the 2-lumen tube 44 with which two lumens (through hole) 42 and 43 installed by shaft orientations in one tube wall 41 as shown in drawing 8 (A) and (B) are formed. Moreover, into one lumen 42 of the 2-lumen tube 44, a minor diameter treatment implement or guide wire 14 is inserted. Furthermore, the actuation wire 45 for immobilization is inserted in in the lumen 43 of another side of the 2-lumen tube 44.
[0035] The loop-formation-like engagement section 46 is formed in the point of this actuation wire 45. This engagement section 46 is formed in the major diameter rather than the outer-diameter dimension of the point of the insertion section 3 of an endoscope 2. And the engagement section 46 of the point of the actuation wire 45 is made to project from the inside of the lumen 43 of the 2-lumen tube 44 by carrying out extrusion actuation of the actuation wire 45 from a hand side at the time of use of the tube 1 with outside of the gestalt of this operation for endoscopes, as shown in drawing 9 . Then, while making the point of the insertion section 3 of an endoscope 2 insert into the loop formation of the engagement section 46 of the actuation wire 45 By pulling and operating the actuation wire 45 to a hand side in this condition You extract the diameter of a loop formation of the engagement section 46 of the actuation wire 45, and make it engaged possible [ engaging and releasing ] according to frictional force in the condition of surrounding the point of the insertion section 3 of an endoscope 2 in the loop formation of the engagement section 46 of the actuation wire 45 as shown in drawing 8 (A) and (B).
[0036] Moreover, by carrying out extrusion actuation of the actuation wire 45 from a hand side, the diameter of a loop formation of the engagement section 46 of the actuation wire 45 is extended, and engagement in the insertion section 3 of an endoscope 2 and the tube 1 with outside is canceled.
[0037] Then, the following effectiveness is done so if it is in the thing of the above-mentioned configuration. Namely, the actuation wire 45 for immobilization is made to insert in in the lumen 43 of the 2-lumen tube 44 with the gestalt of this operation. The diameter of a loop formation of the engagement section 46 of the actuation wire 45 is extracted in the condition of having made the point of the insertion section 3 of an endoscope 2 inserting into the loop formation of the engagement section 46 formed in the point of this actuation wire 45. It is made to make it engaged possible [ engaging and releasing ] according to frictional force in the condition of surrounding the point of the insertion section 3 of an endoscope 2 in the loop formation of the engagement section 46 of the actuation wire 45 as shown in drawing 8 (A) and (B). And since the diameter of a loop formation of the engagement section 46 of the actuation wire 45 can be extended and engagement in the insertion section 3 of an endoscope 2 and the tube 1 with outside can be canceled by carrying out extrusion actuation of the actuation wire 45 from a hand side The activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body can be done without carrying out extraction of the insertion section 3 of an endoscope 2 from a patient's inside of the body with the gestalt of this operation as well as the gestalt of the 1st operation. Therefore, the activity which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 simply compared with the former can be done.
[0038] Furthermore, other treatment implements thicker than the bore of the tube 1 with outside in a coelome also with the gestalt of this operation, For example, since exchange of the treatment implement which demounts the tube 1 with outside from the insertion section 3 of an endoscope 2 in a patient's body, and inserts balun die RETA 16 in the inside of the body can be performed when inserting balun die RETA 16 A thick treatment implement can also be used without restricting the treatment implement which can be used to the bore of the tube 1 with outside by the endoscopic operation. Therefore, there is effectiveness which can increase the application case of the endoscopic technique.
[0039] In addition, you may make it the configuration which hooks the loop formation of the engagement section 46 of the actuation wire 45 on the point of the insertion section 3 of an endoscope 2 and which prepares the hook-like hook section, for example and hooks the loop formation of the engagement section 46 of the actuation wire 45 on this hook section.
[0040] Furthermore, as for this invention, it is needless to say that deformation implementation can be variously carried out in the range which is not limited to the gestalt of the above-mentioned implementation and does not deviate from the summary of this invention. Next, other characteristic technical matters of this application are written in addition as follows.
Account (additional remark term 1) It is the tube with outside for endoscopes which has a flexible tube with a juxtaposition edge and a distal end, and the fixed part which fixes a flexible tube to the distance periphery of an endoscope by at least one or more lumens in the tube with outside attached in an endoscope, and is characterized by the ability to remove a fixed part only by actuation of the juxtaposition section of a flexible tube.
[0041] (Additional remark term 2) Tube device for endoscopes with outside with the structure which can demount a tube (setting for example, in the technique) in the tube attached in the periphery of a scope if needed.
[0042] (The conventional technique of the additional remark terms 1 and 2) The with channel is being fixed on the medical tape etc. outside the former. For removing a channel with outside, extraction of the scope had to be carried out from the patient. Moreover, when it is dependent on the bore of a channel with outside and the treatment implement which can be used also enlarged the bore, the channel outer diameter with outside also became large, and the insertion nature of a scope was reduced.
[0043] (Technical problem which the additional remark terms 1 and 2 tend to solve) The so-called "channel with outside" conventionally attached in an endoscope was not able to remove a channel with outside in the technique. Therefore, it depended on the bore of a channel with outside for the treatment implement which can be used. Moreover, when the bore was enlarged, the insertion nature of a scope worsened.
[0044] (The purpose of the additional remark terms 1 and 2) They are the improvement in safety of the endoscopic technique, and expansion of an application case about expansion of the treatment implement which can be used.
[0045] (Effectiveness of the additional remark terms 1 and 2) Since the channel with outside (a thick treatment implement can also be used.) for which the treatment implement which can be used does not depend on the bore of a channel with outside should just have the bore which can insert guide wire, it can make a channel outer diameter small and, therefore, does not reduce the insertion nature and the operability of a scope. Conventionally, it can carry out now under an X-ray or accepting reality of the technique which was being performed blindly, for example, the example of a balun escape of achalasia etc., and, therefore, safety improves.

[0046]
[Effect of the Invention] Since an engagement discharge means by which the actuation by the side of the engagement section which engages the point of the body of a tube with the point of the insertion section of an endoscope possible [ engaging and releasing ], and the end face section of the body of a tube canceled engagement of the engagement section was established according to this invention, the class of treatment implement which can be used can be expanded and improvement in safety of the endoscopic technique and expansion of an application case can be aimed at.

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[Translation done.]

## DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the front view in which the perspective view showing a part for the point of the insertion section of the endoscope with which (A) attached the tube with outside for endoscopes, the side elevation showing the part of the hand control unit by which (B) was connected with the end face section of the insertion section of an endoscope, and (C) show the apical surface of the insertion section of an endoscope by showing the gestalt of operation of the 1st of this invention.
[Drawing 2] It is the side elevation in which the activity which demounts the tube with outside of the gestalt of the 1st operation for endoscopes from a tube stop ring is explained to, and the perspective view in which (A) shows a part for the point of the insertion section of an endoscope, and (B) show the part of the hand control unit of an endoscope.
[Drawing 3] It is the side elevation in which the perspective view in which (A) shows a part for the point of the insertion section of an endoscope, and (B) show the part of the hand control unit of an endoscope by showing the condition that demounted the tube with outside of the gestalt of the 1st operation for endoscopes from the endoscope, and only the guidewire was left behind.

[Drawing 4] It is the side elevation in which the activity which replaces with the tube with outside of the gestalt of the 1st operation for endoscopes, and inserts other treatment implements is explained to, and the perspective view in which (A) shows a part for the point of the insertion section of an endoscope, and (B) show the part of the hand control unit of an endoscope.
[Drawing 5] Drawing of longitudinal section of an important section showing the gestalt of operation of the 2nd of this invention.
[Drawing 6] It is the perspective view in which the front view showing the apical surface of the insertion section of the endoscope with which (A) attached the tube with outside for endoscopes, and (B) show a part for the point of the insertion section of this endoscope by showing the gestalt of operation of the 3rd of this invention.
[Drawing 7] The perspective view showing a part for the point of the insertion section explaining the activity which demounts the tube with outside of the gestalt of the 3rd operation for endoscopes from a tube stop ring of an endoscope.
[Drawing 8] It is the perspective view in which the front view showing the apical surface of the insertion section of the endoscope with which (A) attached the tube with outside for endoscopes, and (B) show a part for the point of the insertion section of this endoscope by showing the gestalt of operation of the 4th of this invention.
[Drawing 9] The perspective view showing a part for the point of the insertion section explaining the activity which demounts the tube with outside of the gestalt of the 4th operation for endoscopes from the point of an endoscope of an endoscope.
[Drawing 10] The perspective view showing a part for the point of the insertion section explaining the activity which demounts the tube with outside of the gestalt of the 4th operation for endoscopes along with a guidewire of an endoscope.
[Description of Notations]
2 Endoscope
3 Insertion Section
4 Hand Control Unit
8 Body of Tube
9 Tube Stop Ring (Engagement Section)
13 Grasping Section (Engagement Discharge Means)

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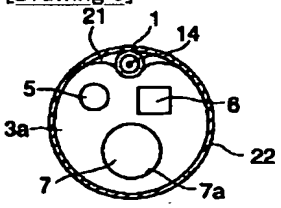
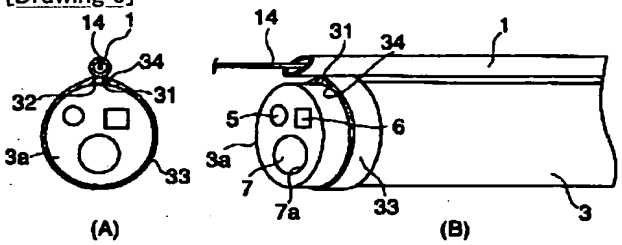
3.In the drawings, any words are not translated.

DRAWINGS

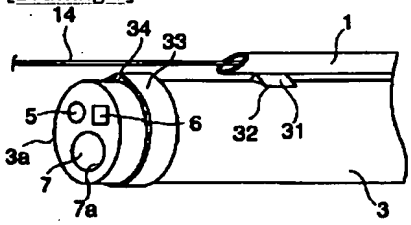
[Drawing 5]



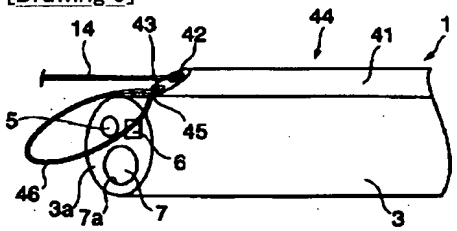

[Drawing 6]




[Drawing 7]




[Drawing 9]

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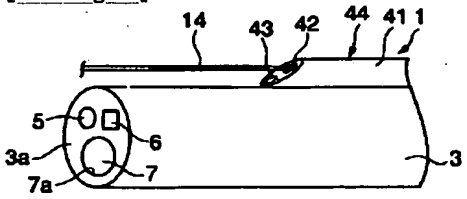
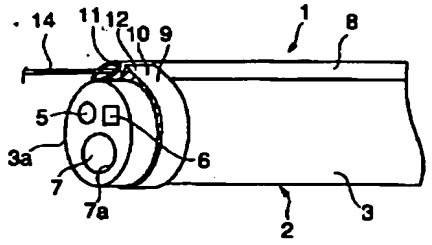
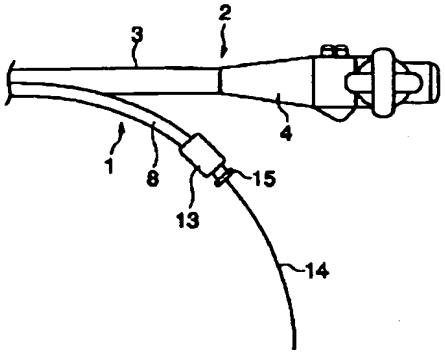



[Drawing 1]

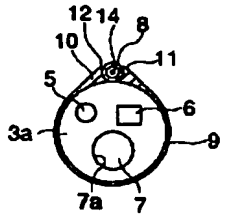
(A)




(B)

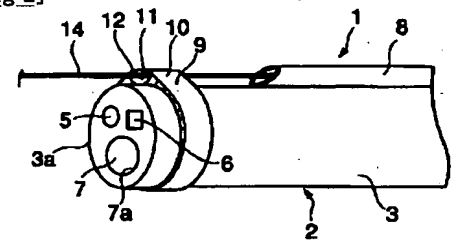



(C)

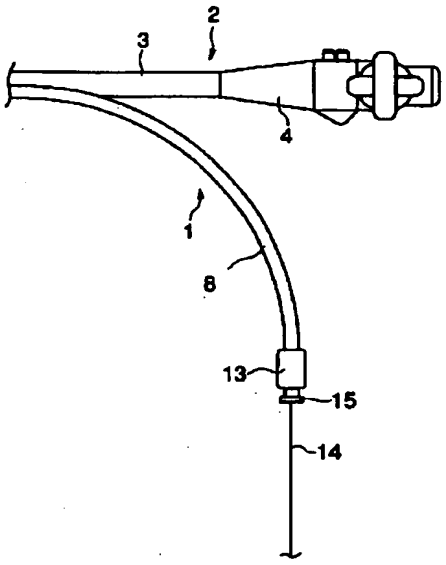



[Drawing 2]

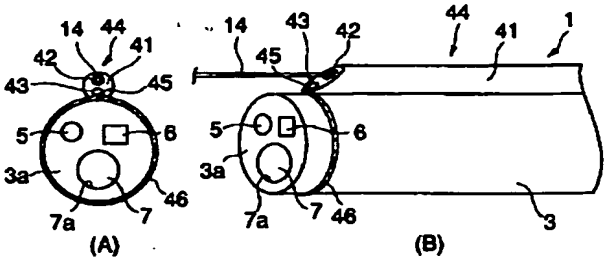
(A)




(B)




[Drawing 8]

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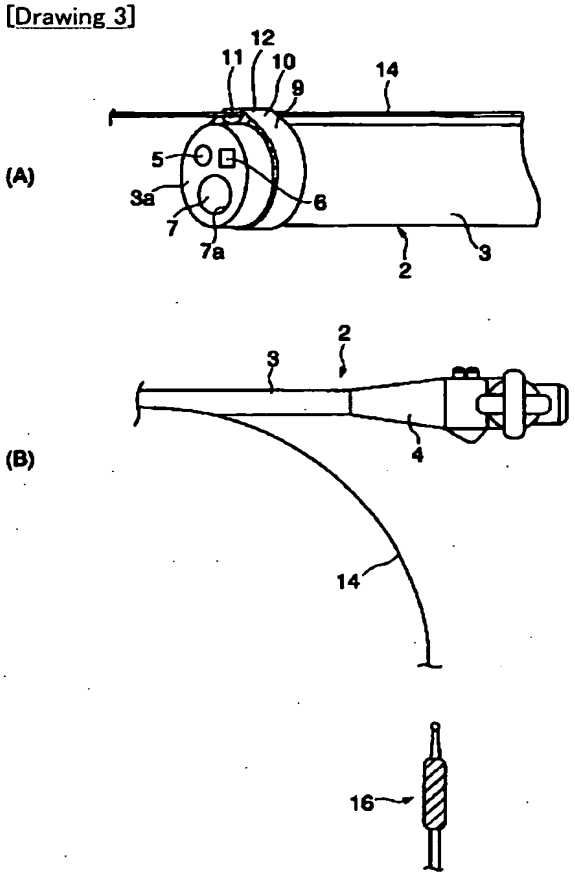
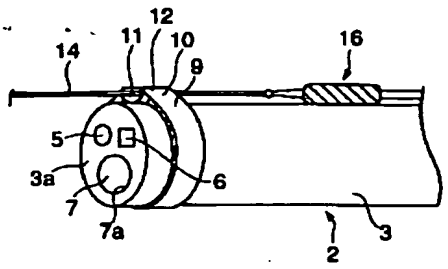
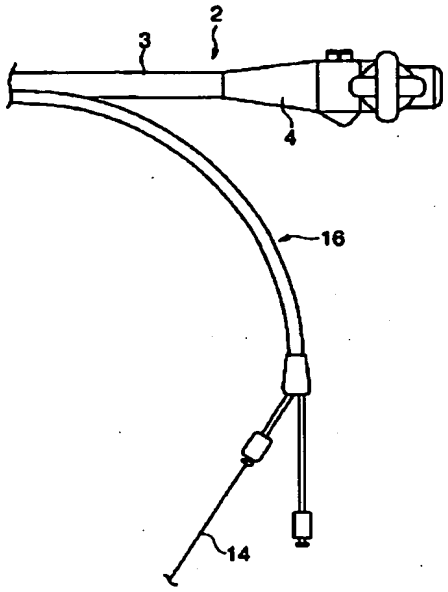



[Drawing 4]

(A)




(B)




[Translation done.]

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（Ａ）　(11)特許出願公開番号
特開2002－143078
（P2002－143078A）
(43)公開日　平成14年５月21日(2002.5.21)

| (51)Int.Cl.' | 識別記号 | ＦＩ | ﾃｰﾏｺｰﾄﾞ(参考) |
|---|---|---|---|
| Ａ６１Ｂ　1/00 | ３００ | Ａ６１Ｂ　1/00 | ３００Ｂ　４Ｃ０６１ |

審査請求　未請求　請求項の数１　ＯＬ　（全８頁）

(21)出願番号　特願2000－340889(P2000－340889)

(22)出願日　平成12年11月８日(2000.11.8)

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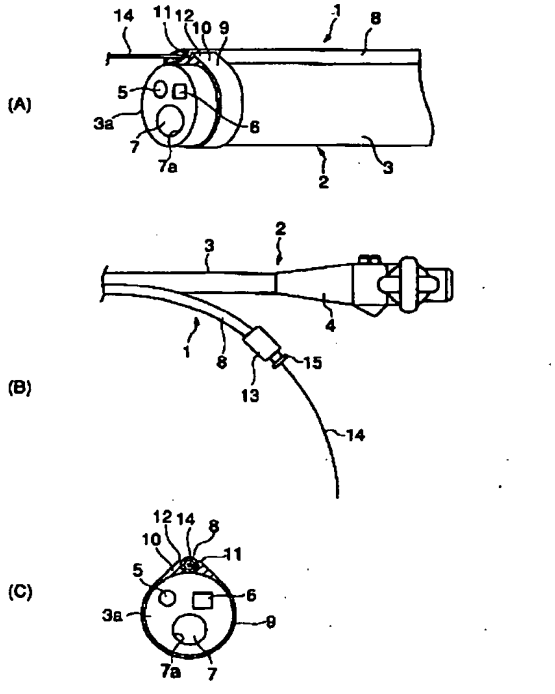
Ｆターム(参考)　4C061 CC14 JJ06

(54)【発明の名称】　内視鏡用外付チューブ

(57)【要約】
【課題】本発明は、使用できる処置具の種類を拡大することができ、内視鏡的手技の安全性向上、適用症例の拡大を図ることができる内視鏡用外付チューブを提供することを最も主要な特徴とする。
【解決手段】チューブ本体８の先端部を内視鏡２の挿入部３の先端部に係脱可能に係合するチューブ固定リング９を設け、チューブ本体８の基端部側の把持部１３の操作によってチューブ固定リング９の係合を解除するようにしたものである。



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【特許請求の範囲】
【請求項１】　内視鏡の挿入部の先端部から基端部側の手元操作部側まで前記内視鏡の挿入部に沿って延設される可撓性チューブによってチューブ本体が形成され、前記内視鏡の挿入部に前記チューブ本体が取り外し可能に取付けられる内視鏡用外付チューブにおいて、
前記チューブ本体の先端部を前記内視鏡の挿入部の先端部に係脱可能に係合する係合部と、
前記チューブ本体の基端部側の操作によって前記係合部の係合を解除する係合解除手段とを具備することを特徴とする内視鏡用外付チューブ。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、内視鏡に着脱可能に取付けられる内視鏡用外付チューブに関する。
【０００２】
【従来の技術】一般に、内視鏡の挿入部に必要に応じて着脱可能に取付けられ、処置具の挿入をガイドする内視鏡用外付チューブが例えば、特開平１１－１９２２０３号公報や、実登２５５８３５４号公報などに示されている。ここで、特開平１１－１９２２０３号公報には外付チューブをゴムバンドや、メディカルテープ等で固定したり、リング状の取付け用キャップなどを介して内視鏡の挿入部に取付ける構成が示されている。さらに、実登２５５８３５４号公報には外付チューブの先端部にシート状の取付け部を設け、この取付け部を両面粘着テープなどによって内視鏡の挿入部に取付ける構成が示されている。
【０００３】
【発明が解決しようとする課題】上記従来構成の外付チューブはゴムバンドや、メディカルテープや、両面粘着テープなどで内視鏡の挿入部に固定したり、取付け用キャップなどを介して内視鏡の挿入部に固定されている。そのため、内視鏡の挿入部に取付けられた外付チューブを内視鏡の挿入部から取外す場合には一旦、内視鏡を患者の体内から抜去した状態で、体外でゴムバンドや、メディカルテープや、両面粘着テープなどを取外したり、取付け用キャップなどを取外す面倒な作業を行う必要があるので、その作業に時間がかかり、内視鏡に取付けられている外付チューブを手技中に外すことは難かしい問題がある。
【０００４】また、患者の体内に内視鏡が挿入された状態では外付チューブを通して体内に挿入できる処置具の種類は外付チューブの内径よりも小径なものに制限されるので、外付チューブの内径よりも大径な処置具を使用することができない問題がある。そのため、内視鏡的手技の適用症例が制限される問題がある。
【０００５】なお、大径な処置具を使用するために外付チューブの内径を大きくした場合にはこの外付チューブの外径も大きくなるので、内視鏡の挿入性を低下させる

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問題がある。
【０００６】本発明は上記事情に着目してなされたもので、その目的は、使用できる処置具の種類を拡大することができ、内視鏡的手技の安全性向上、適用症例の拡大を図ることができる内視鏡用外付チューブを提供することにある。
【０００７】
【課題を解決するための手段】本発明は、内視鏡の挿入部の先端部から基端部側の手元操作部側まで前記内視鏡の挿入部に沿って延設される可撓性チューブによってチューブ本体が形成され、前記内視鏡の挿入部に前記チューブ本体が取り外し可能に取付けられる内視鏡用外付チューブにおいて、前記チューブ本体の先端部を前記内視鏡の挿入部の先端部に係脱可能に係合する係合部と、前記チューブ本体の基端部側の操作によって前記係合部の係合を解除する係合解除手段とを具備することを特徴とする内視鏡用外付チューブである。そして、本発明では、内視鏡の使用時には内視鏡の挿入部の先端部に係合部を係合させ、この状態で、外付チューブのチューブ本体内に処置具を挿通させる。また、外付チューブのチューブ本体を内視鏡の挿入部から取外す場合にはチューブ本体の基端部側の係合解除手段の操作によって係合部の係合を解除するようにしたものである。
【０００８】
【発明の実施の形態】以下、本発明の第１の実施の形態を図１（Ａ）～（Ｃ）乃至図４（Ａ），（Ｂ）を参照して説明する。図１（Ａ）は本実施の形態の内視鏡用外付チューブ１を取付けた内視鏡２の挿入部３の先端部分、図１（Ｂ）は内視鏡２の挿入部３の基端部に連結された手元操作部４の部分をそれぞれ示すものである。
【０００９】さらに、図１（Ｃ）に示すように内視鏡２の挿入部３の先端面３ａには照明レンズが配設された照明窓部５や、対物レンズが配設された観察窓部６や、処置具挿通チャンネル７の先端開口部７ａなどが配設されている。
【００１０】また、内視鏡用外付チューブ１は内視鏡２の挿入部３の先端部から基端部側の手元操作部４側まで内視鏡２の挿入部３に沿って延設される可撓性チューブによってチューブ本体８が形成されている。さらに、この内視鏡用外付チューブ１には内視鏡２の挿入部３の先端部に取付けられるチューブ固定リング（係合部）９が設けられている。このチューブ固定リング９は例えば摩擦による固定、接着などの手段で挿入部３の先端部外周面に固定されている。また、挿入部３の一部がチューブ固定リング９を兼用しても良い。
【００１１】このチューブ固定リング９には図１（Ｃ）に示すように周方向の一部に外向きに突設された突設部１０が形成されている。この突設部１０には外付チューブ１の係合溝１１が形成されている。この係合溝１１は外付チューブ１のチューブ本体８の断面形状と略対応す

る形状に形成されている。ここで、係合溝１１の開口端部には外付チューブ１の直径よりも溝幅が狭い外付チューブ１の抜け防止部１２が形成されている。そして、外付チューブ１のチューブ本体８はこの係合溝１１に挿入された状態で、摩擦力によって係脱可能に係合されるようになっている。この係合時には係合溝１１の抜け防止部１２によって外付チューブ１のチューブ本体８が係合溝１１の開口端部から外部側に抜け落ちることが防止されている。

【００１２】また、外付チューブ１のチューブ本体８の基端部には大径な把持用の把持部（係合解除手段）１３が形成されている。この把持部１３の末端部には細径の処置具、或いはガイドワイヤー１４などを導入するための口金部１５が配設されている。

【００１３】次に、上記構成の本実施の形態の内視鏡用外付チューブ１の作用について説明する。内視鏡下手術で、内視鏡２の挿入部３に本実施の形態の内視鏡用外付チューブ１を装着して使用する場合には、例えば、患者の体外で予め外付チューブ１のチューブ本体８内にガイドワイヤー１４が挿入された状態にセットされる。

【００１４】その後、内視鏡２の挿入部３の先端部に固定されたチューブ固定リング９の係合溝１１に予め外付チューブ１のチューブ本体８の先端部を挿入する状態で係合させる。これにより、図１（Ａ），（Ｂ）に示すように内視鏡２の挿入部３の先端部から基端部側の手元操作部４側まで挿入部３に沿って外付チューブ１のチューブ本体８が延設された状態にセットされる。

【００１５】この状態で、内視鏡２の挿入部３が患者の体腔内に挿入される。そして、患者の体腔内の目的の場所に内視鏡２の挿入部３が挿入された後、必要に応じて外付チューブ１の内部に外付チューブ１の内径よりも細径の処置具が挿入される。このとき、外付チューブ１の内部に挿入される処置具はチューブ本体８内のガイドワイヤー１４にガイドされた状態で体内に挿入される。

【００１６】また、図３（Ｂ）に示すように体腔内に外付チューブ１の内径よりも太い他の処置具、例えばバルーンダイレーター１６を挿入する場合には外付チューブ１を内視鏡２の挿入部３から取外してバルーンダイレーター１６を体内に挿入する処置具の交換作業が行われる。この交換作業時にはガイドワイヤー１４が使用され、次の通り行われる。

【００１７】まず、外付チューブ１のチューブ本体８の基端部の把持部１３が把持された状態で、チューブ本体８が手元側に引っ張り操作される。この操作力によって図２（Ａ）に示すようにチューブ固定リング９の係合溝１１から外付チューブ１のチューブ本体８が手元側に引き抜かれ、内視鏡２の挿入部３と外付チューブ１との係合が解除される。この状態で、ガイドワイヤー１４はそのまま残し、続いてこのガイドワイヤー１４にガイドされた状態で外付チューブ１のみを体外に取出す作業が行われる。

【００１８】さらに、図３（Ｂ）に示すように外付チューブ１の取り出し後、図４（Ｂ）に示すようにガイドワイヤー１４をガイドにして別の処置具、例えばバルーンダイレーター１６が体腔内に挿入される。このとき、例えば内視鏡２の処置具挿通チャンネル７を通して体内に挿入される把持鉗子などによって内視鏡２の観察下でガイドワイヤー１４の先端部を把持した状態で外付チューブ１とバルーンダイレーター１６との交換作業が行われる。なお、必ずしもガイドワイヤー１４の先端部を把持鉗子などによって把持する必要はない。例えば、外付チューブ１の長さの２倍程度の長さのガイドワイヤー１４を使用することにより、ガイドワイヤー１４の手元側を把持した状態で外付チューブ１とバルーンダイレーター１６との交換作業を行なうことができる。

【００１９】そこで、上記構成のものにあっては次の効果を奏する。すなわち、本実施の形態の内視鏡用外付チューブ１では内視鏡２の挿入部３の先端部外周面に固定されるチューブ固定リング９に外付チューブ１の係合溝１１を形成し、外付チューブ１のチューブ本体８をこの係合溝１１に係脱可能に係合させるとともに、外付チューブ１のチューブ本体８の基端部の把持部１３を把持させた状態で、チューブ本体８を手元側に引っ張り操作させ、この操作力によってチューブ固定リング９の係合溝１１から外付チューブ１のチューブ本体８を手元側に引き抜いて内視鏡２の挿入部３と外付チューブ１との係合を解除させるようにしている。そのため、本実施の形態の内視鏡用外付チューブ１では内視鏡２の挿入部３を患者の体内から抜去することなく、患者の体内で内視鏡２の挿入部３から外付チューブ１を取外す作業を行うことができるので、従来に比べて簡単に内視鏡２の挿入部３から外付チューブ１を取外す作業を行うことができる。

【００２０】さらに、本実施の形態では体腔内に外付チューブ１の内径よりも太い他の処置具、例えばバルーンダイレーター１６を挿入する場合には患者の体内で外付チューブ１を内視鏡２の挿入部３から取外してバルーンダイレーター１６を体内に挿入する処置具の交換作業を行うことができるので、内視鏡下手術で、使用できる処置具が外付チューブ１の内径に制限されることなく、太い処置具も使用することができる。そのため、内視鏡的手技の適用症例を増やすことができる効果がある。

【００２１】また、外付チューブ１はガイドワイヤー１４を挿入できる内径を有していれば良いので、外付チューブ１の外径を小さくでき、よって内視鏡２の挿入性・操作性を低下させることがない。そのため、従来、Ｘ線下、もしくは盲目的に行っていた手技、例えばアカラジア（achalasia）のバルーン拡張例等が内視鏡２の直視下で行えるようになり、よって、安全性が向上する。

【００２２】また、図５は本発明の第２の実施の形態を示すものである。本実施の形態は内視鏡２の挿入部３の

外周面に外付チューブ１の装着溝２１を設け、この装着溝２１に第１の実施の形態（図１（Ａ）～（Ｃ）乃至図４（Ａ），（Ｂ）参照）の内視鏡用外付チューブ１を収容する構成に変更したものである。この挿入部３の外周面の装着溝２１は外付チューブ１全体が収容できる程度の大きさに形成されている。

【００２３】また、内視鏡２の挿入部３の先端部には挿入部３の装着溝２１に収容された外付チューブ１を係脱可能に係合するチューブ固定リング（係合部）２２が設けられている。そして、このチューブ固定リング２２と挿入部３の装着溝２１との間で外付チューブ１を挟持することにより、外付チューブ１を係脱可能に係合するようになっている。

【００２４】そこで、上記構成のものにあっては次の効果を奏する。すなわち、本実施の形態では内視鏡２の挿入部３の外周面に外付チューブ１の装着溝２１を設け、この装着溝２１に第１の実施の形態の内視鏡用外付チューブ１を収容するとともに、内視鏡２の挿入部３の先端部にチューブ固定リング２２を設け、このチューブ固定リング２２と挿入部３の装着溝２１との間で外付チューブ１を挟持することにより、外付チューブ１を係脱可能に係合するようにしている。そして、外付チューブ１のチューブ本体８の基端部の把持部１３を把持させた状態で、チューブ本体８を手元側に引っ張り操作させ、この操作力によってチューブ固定リング２２と挿入部３の装着溝２１との間から外付チューブ１のチューブ本体８を手元側に引き抜いて内視鏡２の挿入部３と外付チューブ１との係合を解除させるようにしている。そのため、本実施の形態の内視鏡用外付チューブ１でも第１の実施の形態と同様に内視鏡２の挿入部３を患者の体内から抜去することなく、患者の体内で内視鏡２の挿入部３から外付チューブ１を取外す作業を行うことができるので、従来に比べて簡単に内視鏡２の挿入部３から外付チューブ１を取外す作業を行うことができる。

【００２５】さらに、本実施の形態でも体腔内に外付チューブ１の内径よりも太い他の処置具、例えばバルーンダイレーター１６を挿入する場合には外付チューブ１に挿入されたガイドワイヤー１４をガイドにして患者の体内で外付チューブ１を内視鏡２の挿入部３から取外してバルーンダイレーター１６を体内に挿入する処置具の交換作業を行うことができるので、内視鏡下手術で、使用できる処置具が外付チューブ１の内径に制限されることなく、太い処置具も使用することができる。そのため、内視鏡的手技の適用症例を増やすことができる効果がある。

【００２６】また、本実施の形態の外付チューブ１は内視鏡２の挿入部３の外周面に形成された装着溝２１に収容されているので、内視鏡２の挿入部３の外側に外付チューブ１が突出されることがない。そのため、内視鏡２の挿入部３の外側に外付チューブ１を装着した状態で内



視鏡２の挿入部３を体腔内に挿入する作業性の向上を図ることができる。

【００２７】また、図６（Ａ），（Ｂ）および図７は本発明の第３の実施の形態を示すものである。本実施の形態は第１の実施の形態（図１（Ａ）～（Ｃ）乃至図４（Ａ），（Ｂ）参照）の内視鏡用外付チューブ１の構成を次の通り変更したものである。

【００２８】すなわち、本実施の形態では外付チューブ１の先端部外周面に係合凸部３１が突設されている。この係合凸部３１には図６（Ａ）に示すように外付チューブ１の外周面との接合部から離れるにしたがって幅広になる略三角形状の脚部３２が形成されている。

【００２９】また、内視鏡２の挿入部３の先端部に取付けられるチューブ固定リング３３には外付チューブ１の係合凸部３１と対応する形状の係合凹部３４が形成されている。そして、本実施の形態の外付チューブ１のチューブ本体８は図６（Ａ），（Ｂ）に示すように係合凸部３１がチューブ固定リング３３の係合凹部３４に挿入された状態で、摩擦力によって係脱可能に係合されるようになっている。

【００３０】また、外付チューブ１のチューブ本体８の基端部の把持部１３を把持した状態で、チューブ本体８を手元側に引っ張り操作することにより、このときの操作力によって図７に示すようにチューブ固定リング３３の係合凹部３４から外付チューブ１の係合凸部３１が手元側に引き抜かれ、内視鏡２の挿入部３と外付チューブ１との係合が解除されるようになっている。

【００３１】そこで、上記構成のものにあっては次の効果を奏する。すなわち、本実施の形態では外付チューブ１の先端部外周面に係合凸部３１を突設し、内視鏡２の挿入部３の先端部に取付けられるチューブ固定リング３３の係合凹部３４に外付チューブ１の係合凸部３１を挿入させた状態で、摩擦力によって係脱可能に係合させるとともに、外付チューブ１のチューブ本体８の基端部の把持部１３を把持した状態で、チューブ本体８を手元側に引っ張り操作することにより、このときの操作力によってチューブ固定リング３３の係合凹部３４から外付チューブ１の係合凸部３１を手元側に引き抜いて内視鏡２の挿入部３と外付チューブ１との係合を解除させるようにしている。そのため、本実施の形態でも第１の実施の形態と同様に内視鏡２の挿入部３を患者の体内から抜去することなく、患者の体内で内視鏡２の挿入部３から外付チューブ１を取外す作業を行うことができるので、従来に比べて簡単に内視鏡２の挿入部３から外付チューブ１を取外す作業を行うことができる。

【００３２】さらに、本実施の形態でも体腔内に外付チューブ１の内径よりも太い他の処置具、例えばバルーンダイレーター１６を挿入する場合には患者の体内で外付チューブ１を内視鏡２の挿入部３から取外してバルーンダイレーター１６を体内に挿入する処置具の交換作業を

行うことができるので、内視鏡下手術で、使用できる処置具が外付チューブ１の内径に制限されることなく、太い処置具も使用することができる。そのため、内視鏡的手技の適用症例を増やすことができる効果がある。

【００３３】また、図８（Ａ），（Ｂ）乃至図１０は本発明の第４の実施の形態を示すものである。本実施の形態は第１の実施の形態（図１（Ａ）～（Ｃ）乃至図４（Ａ），（Ｂ）参照）の内視鏡用外付チューブ１の構成を次の通り変更したものである。

【００３４】すなわち、本実施の形態では図８（Ａ），（Ｂ）に示すように１つのチューブ壁４１内に軸方向に延設された２つのルーメン（貫通穴）４２，４３が形成されている２ルーメンチューブ４４によって内視鏡用外付チューブ１が形成されている。また、２ルーメンチューブ４４の一方のルーメン４２内には小径な処置具、或いはガイドワイヤー１４などが挿入されるようになっている。さらに、２ルーメンチューブ４４の他方のルーメン４３内には固定用の操作ワイヤ４５が挿通されている。

【００３５】この操作ワイヤ４５の先端部にはループ状の係合部４６が形成されている。この係合部４６は内視鏡２の挿入部３の先端部の外径寸法よりも大径に形成されている。そして、本実施の形態の内視鏡用外付チューブ１の使用時には手元側から操作ワイヤ４５を押出操作することにより、図９に示すように２ルーメンチューブ４４のルーメン４３内から操作ワイヤ４５の先端部の係合部４６を突出させる。その後、操作ワイヤ４５の係合部４６のループ内に内視鏡２の挿入部３の先端部を挿入させるとともに、この状態で操作ワイヤ４５を手元側に引っ張り操作することにより、操作ワイヤ４５の係合部４６のループ径を絞り、図８（Ａ），（Ｂ）に示すように内視鏡２の挿入部３の先端部を操作ワイヤ４５の係合部４６のループ内に囲む状態で、摩擦力によって係脱可能に係合させるようになっている。

【００３６】また、手元側から操作ワイヤ４５を押出操作することにより、操作ワイヤ４５の係合部４６のループ径を広げて内視鏡２の挿入部３と外付チューブ１との係合が解除されるようになっている。

【００３７】そこで、上記構成のものにあっては次の効果を奏する。すなわち、本実施の形態では２ルーメンチューブ４４のルーメン４３内に固定用の操作ワイヤ４５を挿通させ、この操作ワイヤ４５の先端部に形成された係合部４６のループ内に内視鏡２の挿入部３の先端部を挿入させた状態で操作ワイヤ４５の係合部４６のループ径を絞り、図８（Ａ），（Ｂ）に示すように内視鏡２の挿入部３の先端部を操作ワイヤ４５の係合部４６のループ内に囲む状態で、摩擦力によって係脱可能に係合させるようにしたものである。そして、手元側から操作ワイヤ４５を押出操作することにより、操作ワイヤ４５の係合部４６のループ径を広げて内視鏡２の挿入部３と外付チューブ１との係合を解除することができるので、本実施の形態でも第１の実施の形態と同様に内視鏡２の挿入部３を患者の体内から抜去することなく、患者の体内で内視鏡２の挿入部３から外付チューブ１を取外す作業を行うことができる。そのため、従来に比べて簡単に内視鏡２の挿入部３から外付チューブ１を取外す作業を行うことができる。

【００３８】さらに、本実施の形態でも体腔内に外付チューブ１の内径よりも太い他の処置具、例えばバルーンダイレーター１６を挿入する場合には患者の体内で外付チューブ１を内視鏡２の挿入部３から取外してバルーンダイレーター１６を体内に挿入する処置具の交換作業を行うことができるので、内視鏡下手術で、使用できる処置具が外付チューブ１の内径に制限されることなく、太い処置具も使用することができる。そのため、内視鏡的手技の適用症例を増やすことができる効果がある。

【００３９】なお、内視鏡２の挿入部３の先端部に操作ワイヤ４５の係合部４６のループを引っ掛ける例えばフック状の引っ掛け部を設け、この引っ掛け部に操作ワイヤ４５の係合部４６のループを引っ掛ける構成にしても良い。

【００４０】さらに、本発明は上記実施の形態に限定されるものではなく、本発明の要旨を逸脱しない範囲で種々変形実施できることは勿論である。次に、本出願の他の特徴的な技術事項を下記の通り付記する。

記

（付記項１）　内視鏡に取付けられる外付チューブにおいて、少なくとも一つ以上の内腔で、近位端、遠位端とを有した可撓性チューブと、可撓性チューブを内視鏡の遠位外周に固定する固定部とを有し、固定部は可撓性チューブの近位部の操作のみで取り外しが可能なことを特徴とする内視鏡用外付チューブ。

【００４１】（付記項２）　スコープの外周に取付けられるチューブにおいて、必要に応じて（例えば手技中において）チューブを取外すことが可能な構造を有した内視鏡用外付チューブ機構。

【００４２】（付記項１、２の従来技術）　従来の外付チャンネルはメディカルテープ等で固定されている。外付チャンネルを外すにはスコープを患者から抜去しなければならなかった。また、使える処置具も外付チャンネルの内径に依存され、内径を大きくすると外付チャンネル外径も大きくなり、スコープの挿入性を低下させていた。

【００４３】（付記項１、２が解決しようとする課題）　従来内視鏡に取付けるいわゆる「外付チャンネル」は、手技中に外付チャンネルを外すことができなかった。よって、使える処置具は、外付チャンネルの内径に依存されていた。また、内径を大きくするとスコープの挿入性が悪くなった。

【００４４】（付記項１、２の目的）　使用できる処置

具の拡大を内視鏡的手技の安全性向上、適用症例の拡大。

【００４５】（付記項１、２の効果）　使用できる処置具が外付チャンネルの内径に依存されない（太い処置具も使える。）外付チャンネルはガイドワイヤーを挿入できる内径を有していれば良いので、チャンネル外径を小さくでき、よってスコープの挿入性・操作性を低下させることがない。従来、Ｘ線下、もしくは盲目的に行っていた手技、例えばアカラジアのバルーン拡張例等が直視下で行えるようになり、よって、安全性が向上する。

【００４６】

【発明の効果】本発明によれば、チューブ本体の先端部を内視鏡の挿入部の先端部に係脱可能に係合する係合部と、チューブ本体の基端部側の操作によって係合部の係合を解除する係合解除手段とを設けたので、使用できる処置具の種類を拡大することができ、内視鏡的手技の安全性向上、適用症例の拡大を図ることができる。

【図面の簡単な説明】

【図１】　本発明の第１の実施の形態を示すもので、（Ａ）は内視鏡用外付チューブを取付けた内視鏡の挿入部の先端部分を示す斜視図、（Ｂ）は内視鏡の挿入部の基端部に連結された手元操作部の部分を示す側面図、（Ｃ）は内視鏡の挿入部の先端面を示す正面図。

【図２】　第１の実施の形態の内視鏡用外付チューブをチューブ固定リングから取外す作業を説明するもので、（Ａ）は内視鏡の挿入部の先端部分を示す斜視図、（Ｂ）は内視鏡の手元操作部の部分を示す側面図。

【図３】　第１の実施の形態の内視鏡用外付チューブを内視鏡から取外してガイドワイヤのみが残された状態を示すもので、（Ａ）は内視鏡の挿入部の先端部分を示す斜視図、（Ｂ）は内視鏡の手元操作部の部分を示す側面＊図。

＊図。

【図４】　第１の実施の形態の内視鏡用外付チューブに代えて他の処置具を挿入する作業を説明するもので、（Ａ）は内視鏡の挿入部の先端部分を示す斜視図、（Ｂ）は内視鏡の手元操作部の部分を示す側面図。

【図５】　本発明の第２の実施の形態を示す要部の縦断面図。

【図６】　本発明の第３の実施の形態を示すもので、（Ａ）は内視鏡用外付チューブを取付けた内視鏡の挿入部の先端面を示す正面図、（Ｂ）は同内視鏡の挿入部の先端部分を示す斜視図。

【図７】　第３の実施の形態の内視鏡用外付チューブをチューブ固定リングから取外す作業を説明する内視鏡の挿入部の先端部分を示す斜視図。

【図８】　本発明の第４の実施の形態を示すもので、（Ａ）は内視鏡用外付チューブを取付けた内視鏡の挿入部の先端面を示す正面図、（Ｂ）は同内視鏡の挿入部の先端部分を示す斜視図。

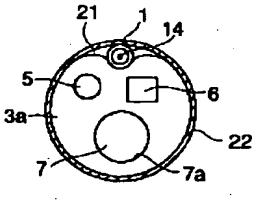
【図９】　第４の実施の形態の内視鏡用外付チューブを内視鏡の先端部から取外す作業を説明する内視鏡の挿入部の先端部分を示す斜視図。

【図１０】　第４の実施の形態の内視鏡用外付チューブをガイドワイヤに沿って取外す作業を説明する内視鏡の挿入部の先端部分を示す斜視図。

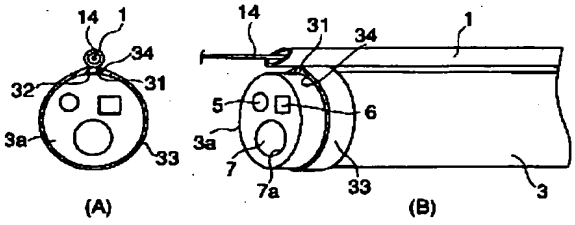
【符号の説明】

２　内視鏡
３　挿入部
４　手元操作部
８　チューブ本体
９　チューブ固定リング（係合部）
１３　把持部（係合解除手段）

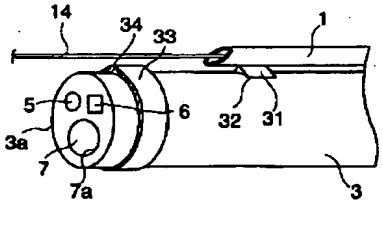
【図５】



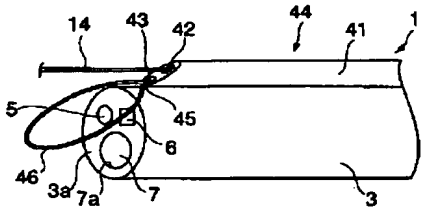

【図６】



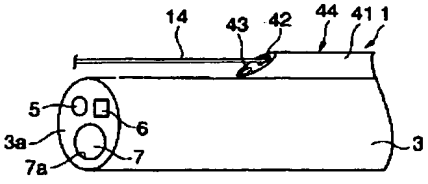

【図７】



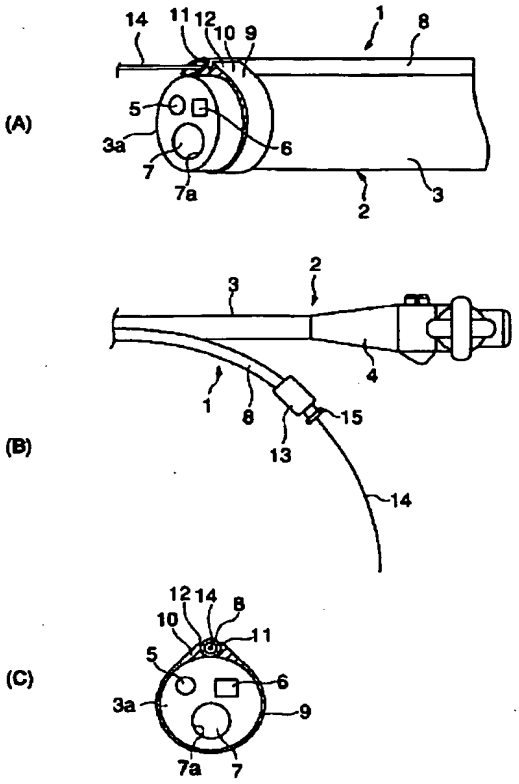

【図９】



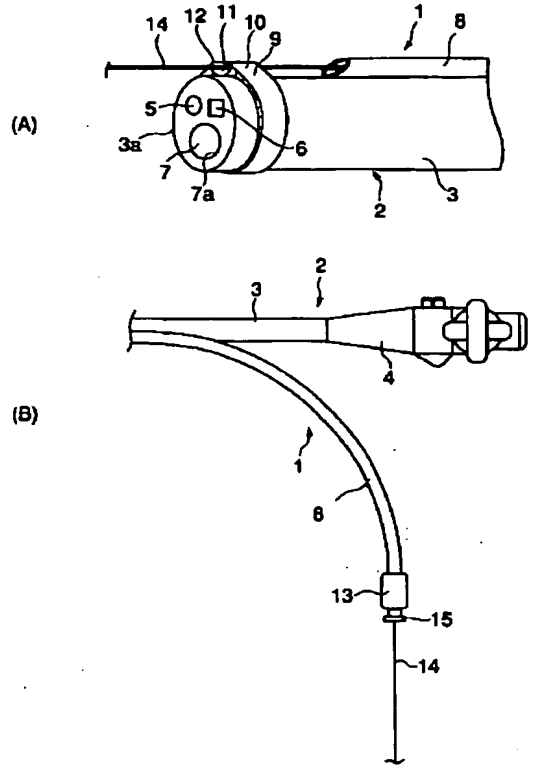

【図１０】



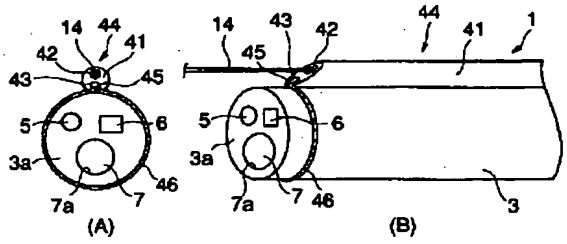
【図１】


(A)
14
11
12
10
9
1
8
5
3a
6
7
7a
2
3
(B)
3
2
4
1
8
15
13
14
(C)
12
14
8
10
11
5
6
3a
9
7a
7

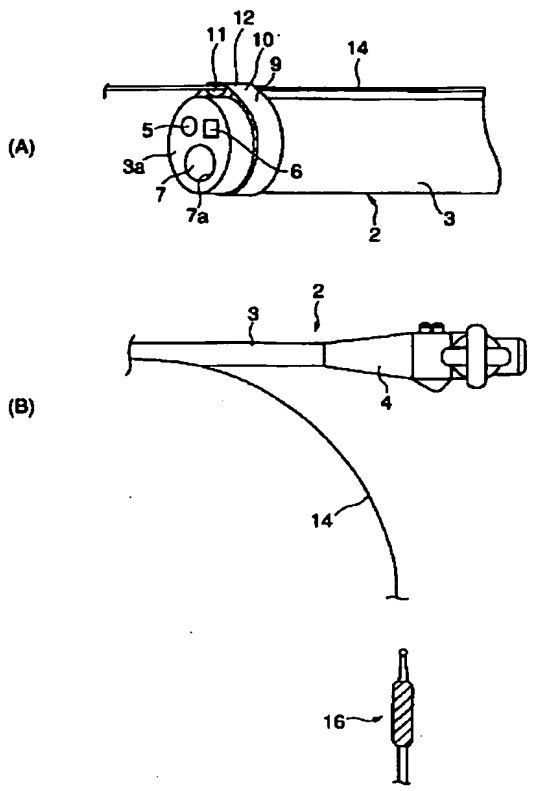
【図２】


(A)
14
12
11
10
9
1
8
5
3a
6
7
7a
2
3
(B)
3
2
4
1
8
13
15
14

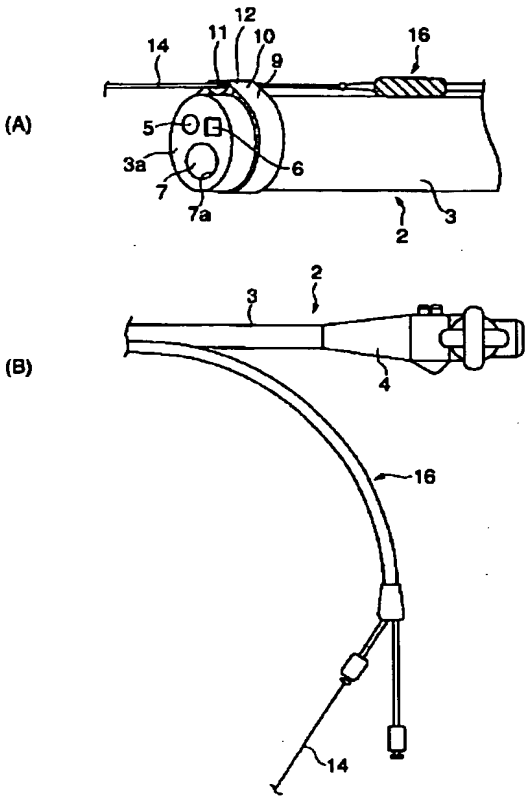
【図８】


14
44
41
42
43
45
5
6
3a
46
7a
7
(A)
14
43
42
44
41
1
45
5
6
3a
7a
7
46
3
(B)

【図３】


(A)
11
12
10
9
14
5
3a
7
7a
6
2
3
(B)
3
2
4
14
16

【図４】


(A)
14
11
12
10
9
16
5
3a
7
7a
6
2
3
(B)
3
2
4
16
14